

How would you prepare a total weight of 200 mg NaCl solution with a concentration of 4.5 % (w/w).

Prepare 142 mg of a 9.1 % (w/w) NaCl solution.

Prepare 9 kg of a 9.2 % (w/w) NaCl solution.

Prepare a 10.2 % (w/w) NaCl solution given 12 g_{NaCl}.

Prepare a 2.1 % (w/w) NaCl solution given 1.2 kg_{NaCl}.

Prepare a 1.7 % (w/w) MgSO_4 solution given 2.3 $\text{kg}_{\text{MgSO}_4}$.

How would you prepare a total weight of 200 mg NaCl solution with a concentration of 4.5 % (w/w).

$$C = \frac{m_{\text{NaCl}}}{m_{\text{total}}}$$

$$4.5\%(\text{w/w}) = \frac{m}{200 \text{ mg}}$$

$$\frac{4.5 \text{ mg}}{100 \text{ mg}} = \frac{m}{200 \text{ mg}}$$

$$m = \frac{(4.5 \text{ mg})(200 \text{ mg})}{100 \text{ mg}}$$

$$m = 9 \text{ mg}$$

$$m_{\text{NaCl}} = 9 \text{ mg}$$

Prepare 142 mg of a 9.1 % (w/w) NaCl solution.

$$C = \frac{M_{\text{NaCl}}}{M_{\text{total}}}$$

$$9.1\% (w/w) = \frac{m}{142 \text{ mg}}$$

$$\frac{9.1 \text{ mg}}{100 \text{ mg}} = \frac{m}{142 \text{ mg}}$$

$$m = \frac{(9.1 \text{ mg})(142 \text{ mg})}{100 \text{ mg}}$$

$$m = 12.92 \text{ mg}$$

$$M_{\text{NaCl}} = 13 \text{ mg}$$

Prepare 9 kg of a 9.2 % (w/w) NaCl solution.

$$C = \frac{m_{\text{NaCl}}}{m_{\text{total}}}$$

$$9.2\% \text{ (w/w)} = \frac{m}{9 \text{ kg}}$$

$$\frac{9.2 \text{ mg}}{100 \text{ mg}} = \frac{m}{9 \text{ kg}}$$

$$m = \frac{(9.2 \text{ mg})(9 \text{ kg})}{100 \text{ mg}}$$

$$m = 0.828 \text{ kg} \left(\frac{1000 \text{ g}}{1 \text{ kg}} \right) = 828 \text{ g}$$

$$m_{\text{NaCl}} = 800 \text{ g}$$

Prepare a 10.2 % (w/w) NaCl solution given 12 g_{NaCl}.

$$C = \frac{m_{\text{NaCl}}}{m_{\text{total}}}$$

$$10.2\% \text{ (w/w)} = \frac{12 \text{ g}}{m}$$

$$\frac{10.2 \text{ mg}}{100 \text{ mg}} = \frac{12 \text{ g}}{m}$$

$$m = \frac{(100 \text{ mg})(12 \text{ g})}{10.2 \text{ mg}}$$

$$m = 117.65 \text{ g}$$

$$m_{\text{total}} = 120 \text{ g}$$

Prepare a 2.1 % (w/w) NaCl solution given 1.2 kg_{NaCl}.

$$C = \frac{m_{\text{NaCl}}}{m_{\text{total}}}$$

$$2.1 \% (w/w) = \frac{1.2 \text{ kg}}{m}$$

$$\frac{2.1 \text{ mg}}{100 \text{ mg}} = \frac{1.2 \text{ kg}}{m}$$

$$m = \frac{(100 \text{ mg})(1.2 \text{ kg})}{2.1 \text{ mg}}$$

$$m = 57.14 \text{ kg}$$

$$m_{\text{total}} = 57 \text{ kg}$$

Prepare a 1.7 % (w/w) MgSO_4 solution given 2.3 kg MgSO_4 .

$$C = \frac{m_{\text{MgSO}_4}}{m_{\text{total}}}$$

$$1.7\% \text{ (w/w)} = \frac{2.3 \text{ kg}}{m}$$

$$\frac{1.7 \text{ mg}}{100 \text{ mg}} = \frac{2.3 \text{ kg}}{m}$$

$$m = \frac{(100 \text{ mg})(2.3 \text{ kg})}{1.7 \text{ mg}}$$

$$m = 135.29 \text{ kg}$$

$$m_{\text{total}} = 140 \text{ kg}$$